

**REMARKS**

Reconsideration and allowance of the above-identified application are respectfully requested. Claims 46-87 are currently pending. Original Claims 1-45 have been cancelled and new Claims 46-87 have been added by the present amendment.

The undersigned notes with appreciation the Examiner's indication that the certified copies of the priority documents have been received and also the Examiner's consideration of, and making of record, the documents submitted with the Information Disclosure Statement filed on February 13, 2007.

Initially the undersigned notes that it is unclear whether the examination was performed on the basis of the claims 1-45 which were originally filed in the PCT application (from which the above-identified application entered the U.S. national stage) or on the basis of the claims 1-44 as amended during processing of that PCT application. As best understood, it appears that the original claims 1-45 were examined rather than the amended claims 1-44 since the Official Action specifically includes claim number 45 in its analysis. The foregoing amendments and the following comments are made based on that assumption. If, however, this is incorrect, the undersigned kindly requests the Examiner to inform the undersigned in the next Official Action so that the record can be clarified on this point. Each of the numbered objections and rejections raised in the Official Action will now be addressed.

**1. The drawings stand objected to under 37 C.F.R §1.83(a).**

In particular, as indicated in the Official Action, the drawings were objected to since the subject matter of claim 1 and claim 19 must be shown. Claims 1 and 19 have been cancelled rendering this objection moot. Additionally, flow charts are submitted herewith as Figures 14a and 14b which illustrate the method steps of newly submitted independent claims 46 and 61 which generally correspond to originally filed independent claims 1 and 19, respectively, although the language has been rewritten to address the clarity objections discussed below. Accordingly reconsideration and withdrawal of this objection are respectfully requested.

**2. In numbered paragraph 3 of the Official action, the drawings stand objected to because in Figures 1-13, the lines are allegedly not well defined.**

Accordingly, replacement drawings sheets are submitted herewith in compliance with 37 C.F.R §1.21(d). Accordingly reconsideration and withdrawal of this objection are respectfully requested.

**3. Headers**

Although not specifically objected to, the organization of the present application was commented upon in the Official Action by way of the form paragraph dealing with suggested headers. By way of the foregoing amendment, headers have been inserted into the appropriate portions of the specification in order to delineate those portions.

#### **4. Abstract**

In numbered paragraph 4 of the Official action, the abstract is objected to for containing the word "said". By way of the foregoing amendments, a new abstract has been added, which abstract does not include the word "said". Accordingly reconsideration and withdrawal of this objection are respectfully requested.

#### **5. Claims 1-45 stand rejected under 35 U.S.C. §112, first paragraph, as allegedly failing to comply with the written description requirement.**

Specifically, the Official action refers to the phrase, "a first control loop which controls the opening of the fuel valves to keep the temperature  $T_{fire}$  of the gas at the inlet of the first wheel of the turbine and the fuel area ratio within specified limits". By way of the foregoing amendments, claim 1 has been canceled rendering this ground of rejection moot. Claim 46 which corresponds to original claim 1 has been rewritten in order to more clearly set forth its combination of features and no longer includes "a first control loop". Moreover, it is respectfully submitted that since claim 1 is an original claim and part of the specification as originally filed, there exists a strong presumption that subject matter set forth in that claim complies with the written description requirement because, of course, inventor must have had possession of the features set forth in the original claims in order to articulate them in that manner that they were filed. See, e.g., MPEP §2163A, header "Original Claims".

Similar comments apply to independent claim 19 which has also been cancelled by way of the foregoing amendments. The claimed "second control loop" language is no longer present in the corresponding new independent claim 61. Moreover, it is respectfully submitted that the original claims were in fact supported by the original description at least because they were originally presented claims. Accordingly, reconsideration and withdrawal of this ground of rejection are respectfully requested.

**6. Claims 1-45 stand rejected under 35 U.S.C. §112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter set forth therein.**

Again, the first and second control loop features have been removed from the newly submitted independent claims. Moreover, all of the claims have been rewritten to conform to current US practice and to clarify the language of the claims. Each of the specific concerns raised by in the Official Action in this regard have been addressed in the newly submitted claims. Accordingly, reconsideration and withdrawal of this ground of rejection are respectfully requested.

**7. Claims 1-45 stand rejected under 35 U.S.C. §103 as allegedly being unpatentable over Schuh (U.S. Patent No. 4,809,497, hereafter "Schuh").**

By way of the foregoing amendment claims 1-45 have been cancelled and new claims 46-87 have been submitted herewith. It should be noted, however, that the

differences between the originally filed claims 1-45 and the newly submitted claims are solely intended to clarify the language of the claims and not to address this rejection under 35 U.S.C §103. It is believed that, when properly understood, both the originally filed claims and the newly submitted claims are clearly patentable over Schuh for at least the following reasons. Prior to discussing Schuh, a brief description of exemplary embodiments described in the above-identified application is presented in order to highlight some of the advantageous characteristics thereof.

According to exemplary embodiments, control of a gas turbine can be improved by correcting the parameters which are themselves used to control, for example, opening of a fuel valve and/or a bleed valve in the gas turbine. The selection of those parameters, and the manner in which they are corrected, are described at length in the application. However, purely as an illustrative example, consider that control of the gas turbine engine according to one exemplary embodiment can be based on a set point exhaust temperature which, in turn, can be corrected using, e.g., four correction factors, associated with pressure drops in intake pipes, pressure drops in exhaust pipes, variations in humidity and speed of a low pressure shaft.

Schuh describes auxiliary power units for rotary and fixed wing aircraft, and other applications. See, e.g., Column 2, lines 35-41 of Schuh. While Schuh does, very generally, describe control loops with which to control such auxiliary power units, the similarities between the claimed combinations and the teachings of Schuh rapidly diverge at that point. In particular, and as recognized in the Official Action, Schuh is not

concerned with teaching one skilled in the art how to correct control parameters which are used to control, e.g., a fuel valve and/or a vent (bleed) valve, and lacks many of the specifics set forth in the claimed combinations in this regard. Starting with newly submitted independent claim 87, Schuh provides no hint or suggestion of using the specific correction values set forth, among other features, therein. Similarly, Schuh provides no teaching or suggestion of "calculating a set point exhaust temperature (TX) as a sum of a reference temperature (TXbase) and a plurality of correction values each of which are associated with a different operating parameter", as set forth in newly submitted independent claims 46 and 87, or "controlling opening of a vent valve to maintain a temperature rise (Trise) of gas in a combustion chamber of the gas turbine within predetermined limits using values of an exhaust temperature (TX) as a function of a compression ratio (PR), which values have been obtained for a plurality of operating conditions of the gas turbine".

Among other deficiencies, Schuh does not provide for "correction values" or values "which have been obtained for a plurality of operating conditions of the gas turbine". Should the Examiner maintain this ground of rejection in a subsequent communication, she or he is respectfully requested to identify which values in Schuh are considered to correlate with these claimed values.

Moreover, the dependent claims recite many different, e.g., algorithmic, aspects of the control methodology which are also absent from Schuh. Indeed, even a cursory review Schuh reveals that Schuh is simply not concerned with such algorithmic

features. In the Official Action, no attempt has been made to explain or identify which dependent features are, or are not, present in Schuh. Instead, claims 1-45 have simply been lumped together in the rejection, leaving the Applicant to sort out the correlations. It is respectfully submitted that this is, at least in part, due to the fact that such features are not taught or suggested by Schuh but are only found in Applicant's specification.

Should the Examiner maintain this ground of rejection in a subsequent communication, she or he is respectfully requested to specifically match the dependent claim features to the specific sections of Schuh which are alleged to teach those features so that Applicant has a full and fair opportunity to respond thereto.

It appears that the Official Action is relying heavily upon the KSR decision to essentially argue that any and all such algorithmic features associated with Applicant's claimed control methods would simply have been obvious, as a mechanism to alleviate Schuh's failure to teach or suggest such features. However, it is respectfully submitted that KSR not only fails to support such logic, but in fact directs the Examiner to reach the opposite conclusion. In KSR, the Supreme Court indicated that: "[w]hen there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill in the art has good reason to pursue the known options within his or her technical grasp" (emphasis added). However with respect to the present application, there exists precisely the opposite situation. Here, a selection of control parameters, and correction for those control parameters have been made from among a potentially infinite number of choices, as

actually stated in the present application. See, e.g., page 20, lines 18-20 of the present application, "[f]or each environmental condition, there is an infinite number of curves...".

Accordingly, it is respectfully submitted that one of ordinary skill in the art would not have been motivated to have reached Applicant's claimed combinations based upon the teachings of Schuh. Reconsideration and withdrawal of this ground of rejection are respectfully requested.

Consequently, in light of the above discussion and in view of the enclosed amendments, the present application is believed to be in condition for allowance and an early and favorable action to that effect is respectfully requested. If, however, there are any remaining unresolved issues that would prevent the issuance of the Notice of Allowance, the Examiner is urged to contact the undersigned at (540) 361-1863 in order to expedite prosecution of this application.

Respectfully submitted,

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Date: April 21, 2009

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